

ATM NETWORK

## BACKGROUND OF THE INVENTION

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The invention relates to an ATM network, comprising a physical network with different stations, wherein a stream of ATM cells is transferred from at least a source station to a group of different destination stations via a same virtual transmission path between the source station and said different destination stations, which transmission path is characterised by ATM cells to which a certain "virtual path identifier", VPI, has been assigned. Such a network is well known. Therefore, it relates to a point-multipoint (one source station, different destination stations) connection via an ATM network. Herewith "messages" are, by means of ATM cells, sent from at least one source station, to various destination stations. All ATM cells to which a certain VPI has been assigned, are sent by the physical network to all destination stations of one specific group of destination stations. Therefore, the group is also characterised by that VPI. Different source stations can send cells to the same group of destination stations or to different groups of destination stations. In bi-directional traffic a station functions alternately simultaneously as source or destination station.

## SUMMARY OF THE INVENTION

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The invention provides that messages that are destined for a certain group of stations and which are transferred thereto via a virtual path, comprising of ATM cells to which the VPI of that virtual path has been assigned, are selectively extracted upon arrival by means of the "virtual connection identifier", VCI, of the ATM cells. In that way different subgroups can be formed within a same group of destination stations, characterised by the group VPI, which subgroups are each characterised by a subgroup VCI.

## EXEMPLARY EMBODIMENT

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Figure 1 shows schematically an ATM network 1 to which a server 2 and a number of terminals 3...12 have been connected. All terminals shown there belong to the same group. From server 2 "messages" (data, voice, video) are sent to the terminals 3...12 by means of ATM cells to which a same "virtual path identifier" VPI<sub>1</sub> has been assigned. Terminals that are served via other paths (out of the same server or other servers) are not drawn in the figure. To the ATM cells is,

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beside the VPI<sub>1</sub>, also a "virtual connection identifier", VCI<sub>1</sub>, VCI<sub>2</sub> or VCI<sub>3</sub> assigned. In that way three subgroups are formed, viz. a subgroup A, formed by the terminals 3, 4, 9 and 12, a subgroup B, formed by the terminals 6, 10 and 11, and a subgroup C, consisting of the terminals 5, 7 and 8. All ATM cells with VPI<sub>1</sub>, destined for terminals that belong to the group of terminals 3...12 which is served by the server 2, are routed by the network 1 to said terminals and appear therefore at all said terminals 3...12. There the VCI values of the cells are investigated. The terminals of subgroup A extract from the cell stream offered only those ATM cells to which VCI<sub>1</sub> has been assigned, the terminals of subgroup B the cells to which VCI<sub>2</sub> has been assigned and the terminals of subgroup C only those to which VCI<sub>3</sub> has been assigned. In that way the subgroups are formed without having to define separate virtual paths for it.

Below in figure 1 a number of two ATM cells has been schematically depicted, each having a VPI and a VCI in the header. When the leftmost cell appears at the entrances of the terminals, transferred out of the server 2 via virtual path with VPI<sub>1</sub>, said cell will be extracted exclusively by the terminals of subgroup A (VCI = VCI<sub>1</sub>). The rightmost cell will only be extracted by terminals of subgroup B (VCI = VCI<sub>2</sub>). It is noted that, where in the above embodiment for the sake of clarity a network having unidirectional traffic is shown, viz. from the server 2 to the terminals 3...12, the invention is not restricted to unidirectional traffic. At another moment, or simultaneous with the traffic out of the server 2 to the terminals 3...12, the terminals can also send cells. In that case, such a terminal functions as a source station, just as in the preceding the server 2 does. ATM cells can be sent by that source station via a virtual path with a specific VPI, to a group of receiving destination stations. Subgroups can then also be formed by means of assigning of different VCIs to the cells to be sent, whereby said cells are selected by the terminals, which belong to different subgroups, on the basis of their different VCI values.